

Amendments to the Claims:

Claims 1 and 16 have been amended. Claim 13 has been cancelled. Amended claims are shown with ~~strikethrough~~ and [brackets] for deleted matter and underlining for added matter. A complete listing of the claims with proper claim identifiers is set out below and will replace all prior versions, and listings of claims in the application:

1. (Currently Amended) A catheter comprising:
 - a catheter tube containing first and second tube lumens in said tube;
 - a distal tip connected directly to said catheter tube, the ~~maximum~~ radial dimension of said tip being substantially the same ~~or smaller than~~ as the radial dimension of the tube adjacent said tip;
 - said distal tip having first and second tip lumens extending therethrough, wherein in an operative configuration, the first and second tip lumens are connected to said first and second tube lumens of said catheter tube;
 - a partition separating the first tip lumen from the second tip lumen;
 - a first opening fluidly connected to the first tip lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid into said body lumen in a reverse mode of operation;
 - a second opening fluidly connected to the second tip lumen the second opening being disposed distally from the first opening and separated from the first opening by a ~~selected stagger distance~~ of between about 1.0 cm and 1.5 cm for outflow of fluid from the first opening when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation;
 - a contoured flow deflection element direction element directing, in the reverse mode of operation, outflow from the first opening away from the second opening;
 - a contoured outlet portion of the second opening reducing an outflow velocity therefrom in the normal mode of operation; and
 - side walls extending away from the partition on the same side as the first opening to create a channel entirely between the first opening and the contoured flow deflection element.

~~said first and second tip opening being the only inflow and/or outflow opening in said catheter.~~

2. (Previously Presented) The catheter according to claim 1, wherein the first and second openings are disposed on opposite sides of the distal tip with respect to a longitudinal axis thereof.

3. (Previously Presented) The catheter according to claim 1, wherein the first and second openings have orifices extending in planes angled with respect to a longitudinal axis of the distal tip.

4. (Previously Presented) The catheter according to claim 1, wherein the contoured flow deflection element is adapted to direct outflow from the second opening away from the first opening in the normal mode of operation.

5. Cancelled.

6. (Previously Presented) The catheter according to claim 1, wherein the first opening includes a longitudinally elongated first ramp portion deflecting outflow therefrom away from a longitudinal axis of the distal tip in the reverse mode of operation.

7. Cancelled.

8. (Previously Presented) The catheter according to claim 1, wherein the second opening includes a longitudinally elongated second ramp portion deflecting outflow from the second opening away from a longitudinal axis of the distal tip in the normal mode.

9. Cancelled.

10. (Previously Presented) The catheter according to claim 1, wherein the first and second lumens have substantially D shaped cross sections.

11. (Previously Presented) The catheter according to claim 1, further comprising a contoured bolus on said tip including a longitudinally elongated first ramp substantially aligned with the first opening, a longitudinally elongated second ramp aligned with the second opening and an atraumatic distal tip.

12. Cancelled.

13. Cancelled.

14. Cancelled.

15. Cancelled.

16. (Currently Amended) A flow control tip for a catheter including a single catheter tube containing multiple lumens, comprising:

an attachment portion directly connected to a distal portion of said catheter tube; and

a contoured bolus defining at least a portion of an inlet and an outlet of the distal tip, the inlet and outlet being separated by a partition, so that, when coupled to the catheter, the inlet is coupled to a first one of the lumens and the outlet is coupled to a second one of the lumens, and a longitudinally elongated flow deflector directing fluids exiting the inlet in a first mode away from the outlet and side walls entirely extending away from the partition on the same side as the inlet to create a channel between the inlet and the bolus, wherein the contoured bolus defines a specified stagger of between about 1.0 cm and 1.5 cm distance between the inlet and the outlet;

~~said inlet and outlet being the only inlet and/or outlet in said catheter tube.~~

17. (Previously Presented) The flow control tip according to claim 16, wherein the contoured bolus further comprises a second longitudinally elongated flow deflector directing fluid exiting the outlet in a second mode away from the inlet.

18. Cancelled.

19. (Previously Presented) The flow control tip according to claim 16, wherein the flow deflector comprises a ramp disposed adjacent an inlet opening.

20. Cancelled.

21. Cancelled.

22. (Withdrawn) The flow control tip according to claim 20, further comprising a split in a distal end of the flow control tip cooperating with the expanded section to increase the exit plane cross-sectional area of the outlet.

23. Cancelled.

24. (Withdrawn) The flow control tip according to claim 16, wherein at least portions of the flow control tip are formed integrally with the catheter.

25. (Withdrawn) A distal tip for a multi-lumen catheter comprising:
first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of the catheter;

a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation;

a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the

normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation;

an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens from one another, wherein an extension portion of the intermediate wall extends beyond the first opening to the second opening; and

a contoured bolus overmolded on the extension portion and including a contoured flow deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening.

26. (Withdrawn) A distal tip for a catheter comprising:

first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of a dual lumen catheter;

a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation;

a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation;

an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens from one another, wherein an extension portion of the intermediate wall extends beyond the first opening to the second opening;

a longitudinal slit formed through the extension portion of the intermediate wall, sides of the slit separated from one another to form an expanded distal portion of the second lumen; and

a contoured bolus overmolded over the slit portion of the intermediate wall and the expanded extension portion of the second lumen and including a contoured flow

deflection element directing, in the reverse mode of operation, outflow from the first opening away from the second opening.

27. (Withdrawn) A distal tip for a catheter comprising:

first and second lumens extending therethrough, wherein in an operative configuration, the first and second lumens are coupled to first and second lumens of the catheter;

a first opening fluidly connected to the first lumen for inflow of fluid from a body lumen into which the distal tip is inserted in a normal mode of operation and for outflow of fluid thereinto in a reverse mode of operation;

a second opening fluidly connected to the second lumen, the second opening being disposed distally from the first opening and separated therefrom by a selected stagger distance for outflow of fluid therefrom when the catheter is in the normal mode of operation and for inflow of fluid from the body lumen in a reverse mode of operation;

an intermediate wall extending along a longitudinal axis of the distal tip and separating the first and second lumens from one another, wherein an extension portion of the intermediate wall extends distally beyond the second opening; and

a first projection mounted on a first side of the extension portion and directing outflow of the fluid from the first opening in the reverse mode of operation away from the extension portion, a proximal end of the first projection substantially aligned with the second opening and a distal end of the first projection proximal of a distal end of the extension portion.

28. (Withdrawn) The distal tip according to claim 27, further comprising:

a second projection mounted on a second side of the extension portion opposite the first side, the second projection directing outflow of the fluid from the second opening in the normal mode of operation away from the extension portion, a proximal end of the second projection spaced from the second opening and a distal end of the second projection substantially aligned with the distal end of the first projection.